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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,727	02/13/2002	John T. Groves	IB-1695	2093

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EXAMINER

SHIBUYA, MARK LANCE

ART UNIT	PAPER NUMBER
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1639

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/076,727	Applicant(s) GROVES ET AL.	
	Examiner Mark L. Shibuya, Ph.D.	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-20,25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 7,8 and 14 is/are objected to.
- 8) ☒ Claim(s) 7-20,25 and 26 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/26/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 10/076,727, (20020160505 A1): Claims 7-20, 25 and 26 are pending and examined.

Continued Examination Under 37 CFR 1.114

2. The request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. This request is once again acknowledged. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/3/2006 has been entered.

3. The applicant's Reply, entered 2/23/2007, has been considered. Rejections and/or objections not reiterated from the previous Office action, are hereby withdrawn. The following rejections and/or objections are either newly applied or are reiterated and are the only rejections and/or objections presently applied to the instant application.

Election/Restrictions

4. Applicant's election of the species of major histocompatibility complex as a final species of dopant molecules, in the Reply entered 2/23/2007, is acknowledged.

Priority

5. This application, 10/076,727, filed 2/13/2002, claims benefit of 60/269,625, filed 2/16/2001, and claims benefit of 60/296,952, filed 6/8/2001.

Information Disclosure Statement

6. The information disclosure statement (IDS) submitted on 5/26/05 was filed after the mailing date of the non-final rejection on 5/26/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Withdrawn Claim Objections/Rejections

7. The following claim rejections/objections are withdrawn in view of applicant's arguments and amendments to the claims:
8. Claims 7-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kam et al., U.S. Publication No. 2002/0009807.
9. Claims 7, 8, 14, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al., US Publication No. 2002/0182633.

Art Unit: 1639

10. Claims 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al., U.S. Publication No. 2002/0182633 and Boxer et al., U.S. Patent No. 6,228,326, (IDS filed 5/15/2002).

Claim Objections

11. Claims 7, 8, and 14 are objected to because of the following informalities: The claims state: "a.", "b." and "c.". However, it is recommended practice to have only a final period in a claim. Appropriate correction is encouraged.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 7-20, 25 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is for new matter.

The specification as filed does not appear to provide support for the limitation wherein cell interaction is a "natural interaction", as in independent claims 7 and 8. The

specification as filed does not appear to provide support for the limitation wherein membrane elements retain "natural biologic activity", as in independent claim 14.

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 7-20, 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "natural interaction" in claims 7 and 8 renders the claims indefinite. The term "natural interaction" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of skill in the art would not be reasonably apprised of the metes and bounds of the claimed invention.

The term "natural biologic activity" in claim 14 renders the claim indefinite. The term "natural biologic activity" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of skill in the art would not be reasonably apprised of the metes and bounds of the claimed invention.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1639

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 7, 8, 10, 11, and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Dori et al., Biomedical Materials Research, (Sept. 7, 1999), p. 75-81, (IDS entered 5/26/2005).

The claims are drawn to methods for screening living cell adhesion on a solid substrate comprising:

a contacting a living cell with a micro-array comprising a substrate comprising an array of adjacent membrane corrals, wherein the corrals contain lipid bilayer membranes above an aqueous layer, wherein said lipid bilayer membranes are doped with one or more dopants to form a doped lipid bilayer membrane, said dopants selected from the group consisting of charged lipids and membrane proteins; and

b. observing cell interaction and adhesion to the doped lipid bilayer membranes after a time period of at least one hour, whereby the dopants direct cell interaction and adhesion, and wherein the cell interaction is a functional and natural interaction.

Dori et al., Ligand accessibility as means to control cell response to bioactive bilayer membranes, Journal of Biomedical Materials Research, 2000.50(1):p. 75-81, (IDS entered 5/26/2005), teaches cells adhesion to lipid bilayer membranes created by Langmuir-Blodgett deposition of either a pure poly(ethylene glycol) lipid having head groups of various lengths or binary mixtures of a poly(ethylene glycol) lipid and a novel

Art Unit: 1639

collagen-like peptide amphiphile, reading on a membrane protein, on hydrophobic mica surface. Said bilayers on mica supports are then placed in a plurality of submerged glass vials, which read on microarrays. Dori, at p. 76 teaches micropatterned surfaces, which read on microarrays. Dori et al., teaches cell adhesion to a lipid bilayer membrane (see, e.g., Dori et al., throughout the publication and abstract, and especially Figures 4 and 5).

Conclusion

18. Claims 7-20, 25 and 26 are rejected. Claims 7, 8, and 14 are objected to.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Shibuya, whose telephone number is (571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. J. Douglas Schultz can be reached on (571) 272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1639

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Mark L. Shibuya', with a stylized flourish at the end.

Mark L. Shibuya, Ph.D.
Primary Examiner
Art Unit 1639